



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/806,518	03/22/2004	Phillip R. Luge	10014908-5	2732
7590 07/05/2005			EXAMINER	
HEWLETT-PACKARD COMPANY Intellectual Property Administration P. O. Box 272400 Fort Collins, CO 80527-2400			VERBITSKY, GAIL KAPLAN	
			ART UNIT	PAPER NUMBER
			2859	

DATE MAILED: 07/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/806,518

Applicant(s)

LUGUE ET AL.

Examiner

Gail Verbitsky

Art Unit

2859

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 May 2005.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7, 12, 15-17, 21, 23-27, 30 and 31 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-7, 12, 15-17, 21, 23-27, 30 and 31 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: the "particular print media" has not been described in the specification.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1, 26-27, 30 are finally rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. In this case, the "particular print media" has not been described in the specification.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1, 26-27, 30 are finally rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In this case, claims 1, 26-27, 30 are rejected due to the reasons stated above in paragraph 3.

The term "particular" in claims 1, 26-27, 30 is a relative term, which renders the claim indefinite. The term "particular" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. In this case, since the term "particular" pertaining to the print media has not been described in the specification it is not clear what applicant means.

Claims 2-7, 31 are rejected by virtue of their dependency on claims 1, 30 respectively.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-5 are finally rejected under 35 U.S.C. 103(a) as being unpatentable over Martin et al. (U.S. 6163662) [hereinafter Martin].

Martin discloses in Fig. 6 a device used for identifying a qualitative characteristics (abstract) and properties (col. 7, line 9) of printing media in a media processing device. The two variables of printing media affecting the temperature of fusing, are weight and water content that manifest themselves as such qualitative characteristics as a heat capacity (col. 1, lines 32-40). Therefore, by knowing a heat capacity of the printing media, the weight and water content of the media could be found. This would imply, that if, for example, the weight or water content are excessive, one could conclude that the printing media is a (particular) bad type, however, if the

Art Unit: 2859

weight and the water content are within predetermined limits, one could conclude that the printing media is a (particular) good type.

The media processing device comprising a thermal (IR) energy source (heater) 25, a thermal energy sensor 27. The heater 25 and the sensor 27 are arranged along a media feed path 32 so as to accommodate transfer/ heat flux (diffusion) of the thermal energy to the media 18 by the heater 25, and also sensing the diffused energy to determine a heat capacity of the media, the heat capacity which, as has been shown above, is indicative of the type of the media. The temperature obtained by temperature sensor 27, is indicative of a qualitative property as a heat capacity (col. 7, lines 18-19).

As shown in Fig. 6, the heater 25 and the sensor 27 are oriented in a line parallel with the media feed path 18, the sensor 27 is being downstream from the heater 25 (col. 6, line 61, col. 7, line 2). The media-processing device is a printer (col. 3, lines 5-10).

It is also shown in Fig. 6, that the device includes a shield/ housing disposed about the heater 25 so as to direct the thermal energy generated by the heater 25 toward the feed path, and a shield/ housing is disposed about the sensor 27 so as to direct the heat radiated from the feed path toward the sensor 27.

As shown in the drawings of Martin, a heater is a non-contact heater and sensors are non-contact sensors. The media-processing device is a printer (col. 3, lines 5-10).

To summarize: Martin teaches that said printer/ media processing device comprises media feed means configured to pass media downstream along a media feed path 32, a heating means 35 disposed along the feed path 32 for applying thermal

Art Unit: 2859

energy to the media 18 passing downstream along the media feed path 32, the temperature sensing means 27 disposed along the feed path 32 downstream the heater 25 for selectively sensing temperature of the media 18 passing downstream from the heater 25. In another configuration, temperature sensor 22b outputs temperature and connected to the processor 72 (entire col. 7) for receiving an output representative of the sensed temperature, determining heat capacity of the media based on the temperature, the heat capacity and the temperature, which are, inherently, at least at some degree indicative of the media type.

8. Claim 6 is finally rejected under 35 U.S.C. 103(a) as being unpatentable over Martin in view of Karlsson (U.S. 6034360).

Martin discloses the device as stated above in paragraph 7.

Although any heater, in a broad sense considered being an IR (heat energy) heater, Martin does not teach explicitly that the heater is an infrared heater, as stated in claims 6.

Karlsson teaches that it is very well known in the art to use a resistor as a heater in an infrared radiator.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the heater, disclosed by Martin, with the heater as taught by Karlsson, because both of them are alternate types of heating devices which will perform the same function, of heating the media of interest, if one is replaced with the other.

Art Unit: 2859

9. Claims 12, 15, 17, 21, 27 are finally rejected under 35 U.S.C. 103(a) as being unpatentable over Martin in view of Hammond.

Martin discloses the device as stated above in paragraph 7.

Martin does not teach the limitations of claims 12, in combination with the remaining limitations of claims 15, 17, 21 and 27. Although Martin measures the temperature, Martin does not explicitly teach to identify media based on sensed temperature compared to a reference temperature, as stated in claim 12.

Hammond teaches to determine (identify/ authenticate) the composition (type) of an unknown sample (media) by using an authentication device (processor) 20 utilizing, among other physical properties, heat capacity and/ or temperature of the unknown sample compared with a reference temperature.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device disclosed by Martin, so as to have somewhat an authentication device capable to identify/ authenticate the unknown sample based on the heat capacity and/ or temperature, as taught by Hammond, in order to provide the operator with necessary data, so as to allow the operator to make a decision how to use the unknown sample (media).

The method steps will be met during the normal operation of the device stated above.

10. Claims 7, 12, 15, 17, 21, 27 are finally rejected under 35 U.S.C. 103(a) as being unpatentable over Martin in view of Nakamura et al. (U.S. 5599104) [hereinafter Nakamura].

Martin discloses the device as stated above in paragraph 7.

Art Unit: 2859

Martin does not explicitly teach a thermocouple of claim 7, a processor of claim 12, in combination with the remaining limitations of claims 15, 17, 21 and 27.

Although Martin measures the temperature, Martin does not explicitly teach to identify media based on sensed temperature compared to a reference temperature, as stated in claim 12.

Nakamura teaches to compare an unknown sample (media) to a reference sample (media) by heating them and sensing the temperature of (thermal energy radiated from) the media of interest and the reference media by thermocouples, the heat capacity of the media of interest could be found by comparison with the reference media (col. 7, formula 5). Therefore, the unknown media of interest could be characterized/ described. This would imply, that the unknown media could be, at least at some degree, identified. A processor 16 is coupled to both temperature sensors to selectively measure temperature and heat capacity of the media (sample).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device disclosed by Martin, so as to modify the processor to make it capable to identify/ authetify the unknown sample based on the heat capacity, as taught by Nakamura, in order to provide the operator with necessary data, so as to allow the operator to make a decision how to use the unknown sample (media).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device, disclosed by Martin, so as to use a known behavior reference, as taught by Nakamura, and well known in the art, obtaining

Art Unit: 2859

a heat capacity which is a known thermo physical property of the sample (media), in order to accurately describe/ identify behavior of the unknown media and thus, to at least some degree, identify the media.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the sensor, disclosed by Martin, with a thermocouple, as taught by Nakamura, because both of them are alternate types of temperature sensing devices which will perform the same function, of sensing the temperature of interest, if one is replaced with the other.

The method step will be met during the normal operation of the device stated above.

11. Claim 25 is finally rejected under 35 U.S.C. 103(a) as being unpatentable over Martin and Hammond, III ((U.S. 4381154) [hereinafter Hammond] as applied to claims 7, 12, 17, 21, 27 above, and further in view of Cernusak et al. (U.S. 6389241) [hereinafter Cernusak].

Martin and Hammond disclose the device as stated above in paragraph 9.

They do not explicitly teach the particularly configured processor, as stated in claim 25.

Cernusak teaches that it is very well known in the art to configure the processor of a media processing device to modify the parameters of the fusing subsystem, among which, the transport speed of the fusing subsystem, based on the measurements from sensors, i.e., media type sensors 405, in the media processing device.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to further configure the processor in the device disclosed

Art Unit: 2859

by Martin and Hammond, so as to modify the toner fuser based on the media, as taught by Cernusak, in order to provide a proper response to the sensors, so as to prolong the life of the device and protect it from overheating related wear.

12. Claim 25 is finally rejected under 35 U.S.C. 103(a) as being unpatentable over Martin and Nakamura as applied to claims 7, 12, 15, 17, 21, 27 above, and further in view of Cernusak et al. (U.S. 6389241) [hereinafter Cernusak].

Martin and Nakamura disclose the device as stated above in paragraph 10.

They do not explicitly teach the particularly configured processor as stated in claim 25.

Cernusak teaches that it is very well known in the art to configure the processor of a media processing device to modify the parameters of the fusing subsystem, among which, the transport speed of the fusing subsystem, based on the measurements from sensors, i.e., media type sensors 405, in the media processing device.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to further configure the processor in the device disclosed by Martin and Nakamura, so as to modify the toner fuser based on the media, as taught by Cernusak, in order to provide a proper response to the sensors, so as to prolong the life of the device and protect it from overheating related wear.

13. Claim 16 is finally rejected under 35 U.S.C. 103(a) as being unpatentable over Martin and Hammond, as applied to claims 12, 15, 17, 21, 27 above, and further in view of Karlsson.

Martin and Hammond disclose the device as stated above in paragraph 9.

Art Unit: 2859

They do not teach that the heater is an infrared heater, as stated in claim 16.

Karlsson teaches that it is very well known in the art to use a resistor as a heater in an infrared radiator.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the heater, disclosed by Martin and Hammond, with the heater as taught by Karlsson, because both of them are alternate types of heating devices which will perform the same function, of heating the media of interest, if one is replaced with the other.

14. Claim 16 is finally rejected under 35 U.S.C. 103(a) as being unpatentable over Martin and Nakamura, as applied to claims 7, 12, 15, 17, 21, 27 above, and further in view of Karlsson

Martin and Nakamura disclose the device as stated above in paragraph 10.

They do not teach that the heater is an infrared heater, as stated in claim 16.

Karlsson teaches that it is very well known in the art to use a resistor as a heater in an infrared radiator.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the heater, disclosed by Martin and Nakamura, with the heater as taught by Karlsson, because both of them are alternate types of heating devices which will perform the same function, of heating the media of interest, if one is replaced with the other.

15. Claims 23-24, 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Martin in view of Hammond in view of Weiss (U.S. 4887229).

Art Unit: 2859

Martin discloses the device as stated above in paragraph 7.

Martin does not explicitly teach means for identification (processor) and the remaining limitations of claims 23-24.

Hammond teaches to determine (identify/ authenticate) the composition (type) of an unknown sample (media) by using an authentication device (processor) 20 utilizing, among other physical properties, heat capacity and/ or temperature of the unknown sample.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the processor, disclosed by Martin, so as to make it capable to authenticate to identify/ authenticate the unknown sample based on the heat capacity, as taught by Hammond, in order to provide the operator with necessary data, so as to allow the operator to make a decision how to use the unknown sample (media).

Weiss discloses in Fig. 6 a device comprising a chopper (keyed or switched shield) facing a temperature sensor for selectively interrupting heat radiation (selectively shield) flow between a body (media) of interest and the sensor. Therefore, the heat radiation (temperature) detected by the sensor is in the waveform (pulsed), as shown in Fig. 2b. A data processor 29 is adapted to analyze the pulsed signal from the sensor.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device disclosed by Martin, so as to have a shield/ chopper for selectively interrupting heat radiation from the body to the sensor, as

Art Unit: 2859

taught by Weiss, in order to minimize signal-to-noise ratio, as already suggested by Weiss (entire col. 1), in order to improve accuracy of the device.

With respect to "whereby"/"thereby", as stated in claim 23: it has been held that the functional "whereby" statement does not define any structure and accordingly cannot serve to distinguish. In re Mason, 114 USPQ 127, 44 CCPA 937 (1957).

16. Claim 31 is finally rejected under 35 U.S.C. 103(a) as being unpatentable over Martin, Hammond and Weiss, as applied to claims 23-24 and 30 above, and further in view of Pompei (U.S. 6499877).

Martin, Hammond and Weiss disclose the device as stated above in paragraph 15.

They do not teach a reference means indicating ambient temperature, so as the processor compares the ambient reference temperature and the measured temperature, as stated in claim 31.

Pompei teaches to measure a surface of interest temperature and an ambient (reference) temperature, wherein the actual temperature is based on the comparison of these two temperatures.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device disclosed by Martin, Hammond and Weiss, so as to use a reference (ambient) temperature, as taught by Pompei, to compare to the sensed temperature, so as to provide an instant comparison with a reference, and allow instant correction (correcting factor), and thus, improving accuracy of the device.

17. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Martin in view of Hammond, III ((U.S. 4381154) and JP 01242947A [hereinafter JP].

Martin discloses the device in the field of applicant's endeavor. Although Martin teaches to measure physical properties of the media, i.e., heat capacity, thermal conductivity, temperature, such properties known to be indicative of the type of the media, Martin does not explicitly state that the media could be identified (named) based on the measured heat capacity, as stated in claim. 26.

Hammond teaches to determine (identify/ authenticate) the composition (type) of an unknown sample (media) by using an authentication device 20 utilizing, among other physical properties, heat capacity of the unknown sample.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the processor, disclosed by Martin, so as to be capable to identify/ authenticate the unknown sample based on the heat capacity, as taught by Hammond, in order to provide the operator with necessary data, so as to allow the operator to make a decision how to use the unknown sample (media).

JP teaches a device for determining a heat capacity of a sample by heating one surface (heated patch) of the sample, while another surface (unheated patch) is not heated. JP obtains temperature difference (rise) from heated and unheated patches and heat capacity is calculated (measured).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device disclosed by Martin, so as to heat one portion of the sample (media) and by obtaining temperature difference between the

Art Unit: 2859

portions, determine heat capacity of the sample (media), as taught by JP, because the heat capacity is known to depend on temperature, on the other hand, it is a thermo physical parameter characterizing the sample property.

Response to Arguments

18. Applicant's arguments with respect to claims 1-7, 12, 15-17, 21, 23-27, 30-31 have been considered but are moot in view of the new ground(s) of rejection necessitated by the present amendment.

Applicant states that Martin does not teach identifying the particular print media type based on heat capacity of the media. This argument is not persuasive. Please refer to paragraph 4 for a comprehensive Examiner's description of the Martin's disclosure.

Applicant states that Martin does not disclose a processor. This argument is not persuasive because, A) this limitation is not stated in claim 1. It is the claims that define the claimed invention, and it is claims, not specification that are anticipated or unpatentable. Constant v. Advanced Micro-Devices, Inc., 7 USPQ2d 1064.

B) Martin discloses a system controller 72 which acts as a processor by using a memory and executing instructions.

Also, to clarify, the Examiner uses Hammond and Nakamura not because Martin does not teach to determine the temperature, but because Martin does not teach to compare determined temperature with a reference temperature. Martin discloses temperature sensors 27 and 22a to measure temperature.

Art Unit: 2859

Applicant states that Hammond, Karlsson, Nakamura, Weiss and Pompei are a non-analogous art because Hammond does not teach to identify a print media and a particular print media.

Applicant states that Francis is a non-analogous art. In response to applicant's statement that Francis is a non-analogous art, it has been held that the determination that a reference is from non-analogous art is twofold. First, we decide if the reference is within the filed of inventor's endeavor. If it is not, we proceed to determine whether the reference is reasonably pertinent to the particular problem with which the inventor was involved. In re Wood, 202 USPQ 171, 174. In this case, the Examiner uses Hammond, Karlsson, Nakamura, Weiss and Pompei as secondary references for their teaching that media type could be identified as taught by Applicant. Martin, in a broad sense, teaches to identify print media type (bad/ good), therefore, the combinations of Martin and Hammond, Karlsson, Nakamura, Weiss and Pompei respectively teach to identify the print media.

Also, Applicant has never described what Applicant means by the term identification of media type: color, thickness, weight, roughness, specific name, chemical composition, density, higher/ lower category, authenticity, appearance? Therefore, the Examiner, in the rejection on the merits uses a broadest reasonable interpretation of the term "type" as given by Webster's Dictionary, 10th edition, page 1278: "quality common to a number (individuals) that distinguish them as identifiable class". In this case, different quality (different heat capacity related to different weight) of Martin acts as a measure to identify a "class" or type.

Art Unit: 2859

Conclusion

19. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art cited in the PTO-892 and not mentioned above disclose related devices and methods.

Any inquiry concerning this communication should be directed to the Examiner Verbitsky who can be reached at (571) 272-2253 Monday through Friday 8:00 to 4:00 ET.

GKV

Gail Verbitsky

Primary Patent Examiner, TC 2800



June 28, 2005